



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/396,470	09/15/1999	EUEE-SEON JANG	030681-152	7479

21839 7590 02/27/2002

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

SENF1, BEHROOZ M

ART UNIT	PAPER NUMBER
----------	--------------

2613

DATE MAILED: 02/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/396,470

Applicant(s)

JANG ET AL.

Examiner

Behrooz Senfi

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1 – 3, 8 - 9 and 19, are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (US 6,262,737).

Regarding claims 1 and 19, Li '737 discloses progressive 3-D mesh information coding and decoding, and dividing 3-D mesh into a plurality of mesh, and coding separately (i.e. abstract), and multiplexing the plurality of coded mesh (i.e. col.14, lines 35+), and transmitting (i.e. col. 2, lines 49+).

Regarding claim 2, Li '737 discloses connectivity and geometry information for reconstruction (i.e. abstract) and photometry information would be necessitated and an inherent feature for the process.

Regarding claim 3, Li '737 discloses extracting one or more mesh object (i.e. fig. 1, parts a, and b), and dividing one or more mesh object layers each into a plurality of mesh (i.e. abstract).

Regarding claim 8, the limitations claimed are substantially similar to claims 1 and 3; therefore the ground for rejecting claims 1 and 3 also apply here.

As for additional limitation; decoding method (see abstract).

As for claim 9, removing redundant information (col. 5, lines 57+).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 – 7, 10 – 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,262,737) in view of Tao et al. (US 5,818,463).

Regarding claim 4, Li '737 teaches progressive 3-D mesh information coding, and dividing 3-D mesh into a plurality of mesh, and coding separately (i.e. abstract).

Li '737 fails to teach reusing the information generated by the coded mesh for coding mesh component, which has not been coded yet.

However, such a limitation is well-known in the art as evidenced by Tao '463, in particular fig. 2, clearly teaches while a mesh component is coded the information generated will feed back to wire-frame synthesizer which will be used for the next coding mesh component (i.e. fig. 2, units 212, 214, 216).

In view of this, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Li '737 as taught by Tao '463, since reusing the information will speed up the processing.

Regarding claims 5 and 15, Li '737 fails to explicitly teach dividing a transmitted bit stream into a plurality of coded mesh, also decoding each and reconstructing a 3-D mesh by synthesizing.

However, such a limitation is well-known in the art as evidenced by Tao '463, in particular fig. 2, clearly teaches plurality of bit streams being coded (i.e. units 202, 206 and 216) and decoded (i.e. unit 208) and reconstructing a 3-D mesh through multiplexer 218.

Regarding claim 6, Tao '463 teaches identifying characteristic features of the object, and shape and position of mesh (i.e. col. 3, lines 29+), which is equivalent to classifying mesh.

Regarding claims 7 and 16, the limitation claimed is substantially similar to claim 4, therefore the ground for rejecting claim 4, also apply here.

Regarding claim 10, the limitations claimed are substantially similar to claims 1, 3 and 4 - 5, therefore the ground for rejecting claims 1, 3 and 4 - 5, also apply here.

Regarding claim 11, the limitation claimed is substantially similar to claims 2 and 9, therefore the ground for rejecting claims 2 and 9, also apply here.

Regarding claims 12 – 13 and 17, the combination of Li '737 and Tao '463 teaches a progressive 3-D mesh information coding and plurality of component coding (i.e. abstract of Li '737), and multiplexing (i.e. col.14, lines 35+ of Li '737), for the additional limitation a 3-D data analyzer for receiving a 3-D mesh and reconstructing the input 3-D mesh into plurality of mesh (see col. 2, lines 58+ of Tao '463).

Regarding claim 14, the limitation claimed is substantially similar to claim 4, therefore the ground for rejecting claim 4, also apply here.

Regarding claims 18 and 20, the limitation claimed is substantially similar to claims 5 and 9, therefore the ground for rejecting claims 5 and 9, also apply here.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure;

Black et al. (US 5,774,591) apparatus and method for recognizing facial expressions and facial gestures in a sequence of image.

Deering (US 5,870,094) system and method for transferring compressed three dimensional graphics data.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(703)305-0132**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chris Kelley** can be reached on **(703)305-4856**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Application/Control Number: 09/396,470

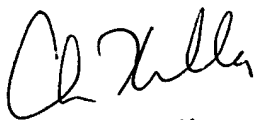
Page 6

Art Unit: 2613

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

B.S. B.S.

02/25/02


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600